Antibiotic Resistance (AR) Healthcare-Associated Infections
PATIENT SAFETY ATLAS

Navigation Guide

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IN THIS GUIDE

About the AR Patient Safety Atlas

APP OVERVIEW

- The AR Patient Safety Atlas provides open and interactive data, which is reported to CDC through the [National Healthcare Safety Network](#) (NHSN), about healthcare-associated infections (HAIs) caused by antibiotic resistant bacteria.

- The app allows users to customize visualizations and view antibiotic resistance data from U.S. healthcare facilities by:

  – Geographical area

  – Time period

  – Event type

  – Patient age

- Users can download maps and tables of raw data in .csv, Excel or Powerpoint formats.

ABOUT THE DATA

- The app includes 2011-2014 data reported to NHSN from more than 4,000 healthcare facilities. The primary data metric in the app is percent resistance.
- Bacteria were gathered by facilities after a CAUTI, CLABSI, or SSI infection and were tested for susceptibility (if a specific antibiotic could limit growth or kill them).
  - The app includes data for 31 bug-drug profiles (or phenotypes, pathogen-antibiotic combinations that are used to describe the bacteria's resistance to specific drugs).
- Bacteria from these infections that were not slowed or killed by the antibiotic were reported as "resistant."
- Percent resistance was calculated by dividing the number of resistant pathogens reported by the total number of pathogens tested.

Getting Started

GETTING STARTED

- To start using the AR Patient Safety Atlas:
  - Direct your Internet browser to this site:
    http://www.cdc.gov/hai/surveillance/ar-patient-safety-atlas.html
  - Click "Go to Map View"

DISCLAIMER

- Users must click "I Accept" on the pop-up disclaimer in order to access the app. In general, the user states that they understand:
  - Data used in the app were reported to NHSN by U.S. hospital laboratories and could contain reporting errors.
  - Data presented in the Atlas are not representative of the entire U.S. patient population and may vary by state and year. Caution should be used when making direct comparisons of percent resistance or number of resistant infections between states.
  - The percentages of resistant infections presented may not reflect the total burden of healthcare-associated infections.
  - Facilities may revise their data in NHSN before data in the app is updated. All updates may not be reflected in the Atlas.
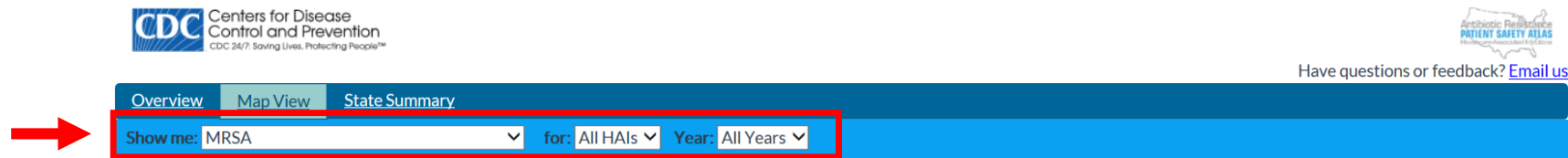
Map View Feature

MAP VIEW: How to Search and Filter Data

▪ After accepting the disclaimer, you will be taken to the Map View, where you can apply filters:

1. Select one of the 31 bug-drug profiles (phenotypes)

2. Select one or all of the three HAI event types

3. Select to view data by year or combined years

MAP VIEW: How to Search and Filter Data

- After the map updates to the filters you have chosen, the app will show the phenotype/event/time frame you have selected at the top of the dashboard.

MAP VIEW: How to Search and Filter Data

- The map and data tables will update based on filter selections.
- The data will default to show national percent resistance for the selected phenotype and time period.
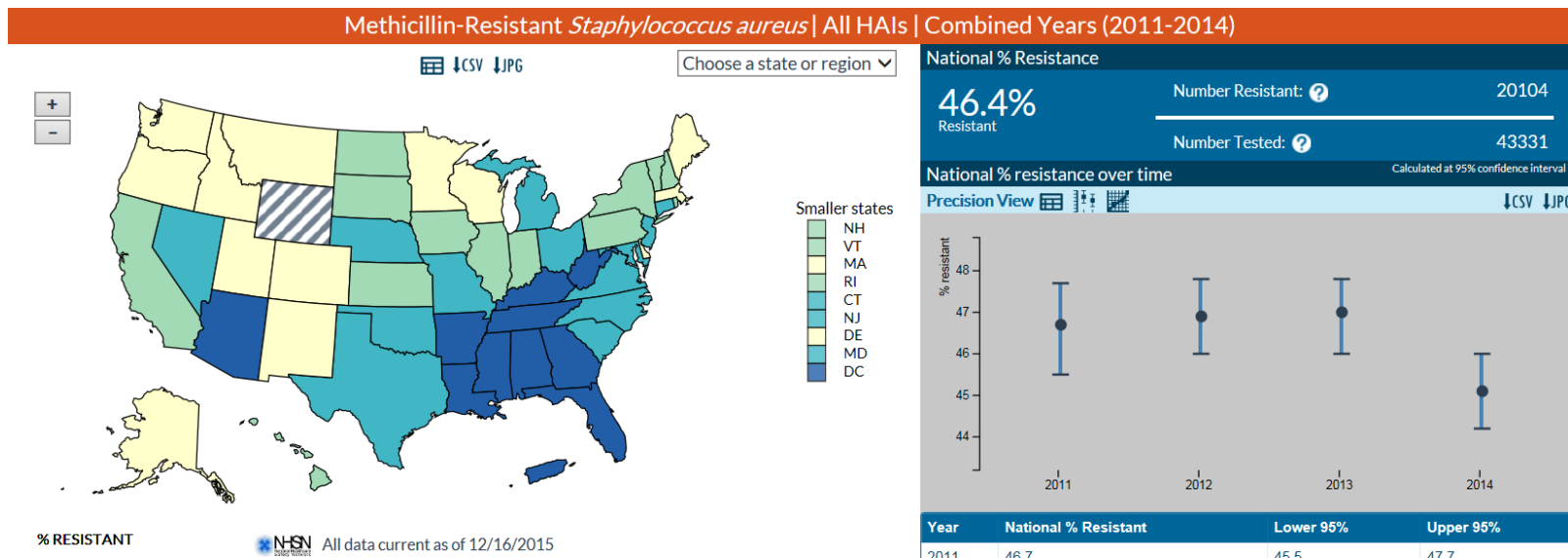
MAP VIEW: How to Search and Filter Data

▪ After the map updates, you can add filters to see more granular data in different ways.

 – **Select the geographical area** you want to see by choosing National, State, or Regional in the drop-down menu

Alternatively, you can click a specific state on the map to view its data.

MAP VIEW: How to Search and Filter Data

- The map and data tables will update based on new filter selections.

- Additional data tables will be revealed in the right column to show:

  1. State or region's percent resistance
  2. Resistance over time
  3. Resistance by event type
  4. Resistance by age group
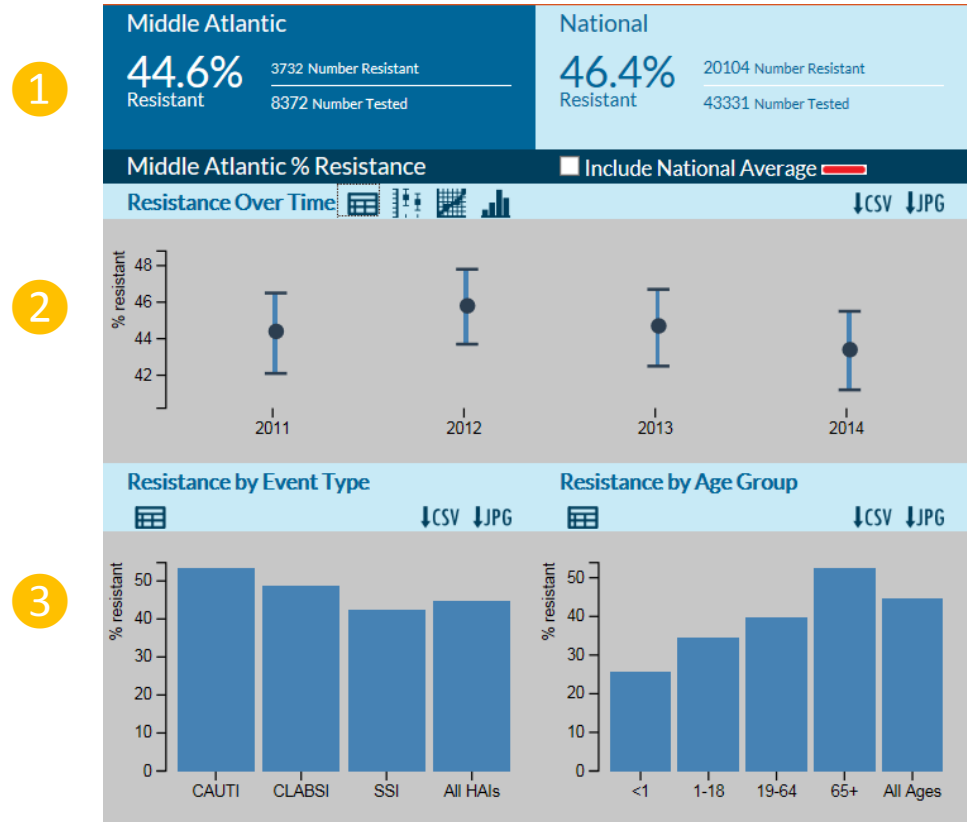
MAP VIEW: How to Search and Filter Data

- When viewing a specific state or region, you can also view national percent resistance within these tables by checking "Include National Average."

- The tables will update with national data revealed in red lines (on top of state/regional data).
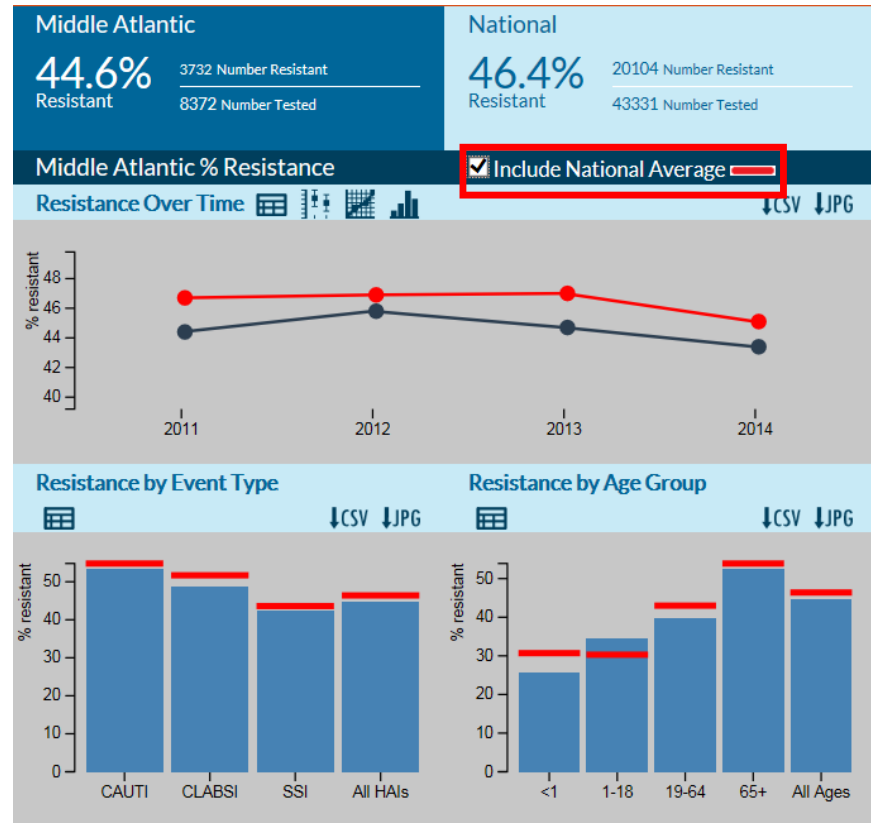
MAP VIEW: How to View Data in Different Formats

- After filters are chosen, you can change how the data is presented.

- **Option 1:** Toggle between map or table view by clicking the table icon at the top of the dashboard.
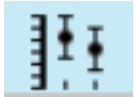
MAP VIEW: How to View Data in Different Formats

▪ After filters are chosen, you can change how the data is presented.

▪ **Option 2:** Change the type of data table viewed by selecting the appropriate icon in the right column display.

 Selecting the first icon will reveal the raw data in a **table.**

 Selecting the second icon will show **confidence interval ranges.**

 Selecting the third icon will show data in a **line graph.**
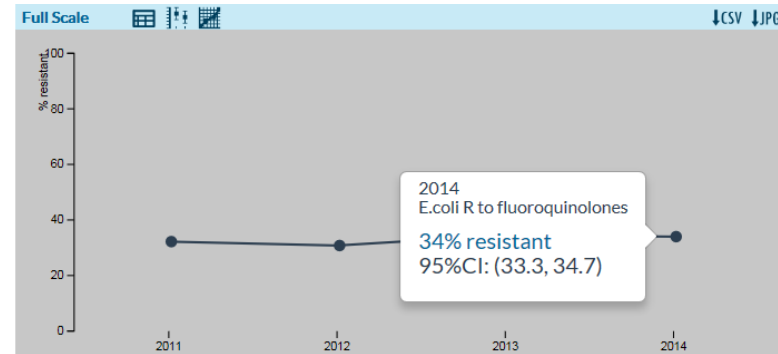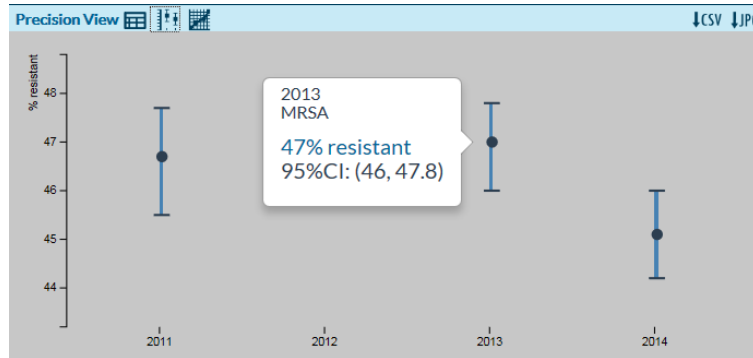
 Selecting the fourth icon will show data in a **bar graph.** *(Not available on National display; State or Region must be selected to view.)*

MAP VIEW: How to View Data in Different Formats

- You can also see the percent resistance for that combination of phenotype/region/event/time frame by placing your cursor over the data point shown.

MAP VIEW: How to Download Data

▪ You can download the data in one of two ways:

1. **Download the current view** by selecting the arrow JPG icon, which will export as an image file.

2. **Or download the raw data** by selecting the arrow CSV icon, which will export to a text data file (.csv).

MAP VIEW: Other Dashboard Features

- About this Pathogen
  - Overviews of the bacteria, prevalence and threat level (where available), and link to the phenotype's bug-drug profile

About this Pathogen

- *S.aureus* cause a range of illnesses, from skin and wound infections to pneumonia and bloodstream infections that can cause sepsis and death
- Staph bacteria, including those resistant to first-line therapy, methicillin-resistant *S. aureus* (MRSA), are the second most common causes of healthcare-associated infections according to a 2011 national prevalence survey performed by CDC. Less severe infections are common and occur outside the non-acute healthcare settings and in the community
- Threat Level: Serious. Find more information about MRSA in the AR Threat Report.
- Read more about this bug-drug profile in the Phenotype Definitions document

MAP VIEW: Other Dashboard Features

- Footnotes
  - Descriptions for "insufficient data" or "not defined"

Footnotes

- **Insufficient Data** - Between 1 and 19 isolates were tested for susceptibility. The percent resistance and accompanying data points cannot be calculated when the number of tested isolates is less than 20
- **Not Defined** - Zero isolates were tested. The percent resistance and accompanying data points cannot be calculated when the number of observations in the denominator is zero

MAP VIEW: Other Dashboard Features

- Data Resources
  - Clickable links to export the data into .csv or Excel files
- Additional Resources
  - Supporting documents for further context on the data or topic

Data Resources
- Export state specific data in CSV
- Export state specific data in Excel

Additional Resources
- Learn about Atlas terms and abbreviations in the Data Dictionary [PDF]
- Read how resistance is threatening future use of the powerful drugs listed above
- See more information on these bug-drug profiles in the phenotype definitions document [PDF]

State Summary Feature

STATE SUMMARY: How to Search and Filter Data

▪ You can also view all of the phenotype data by a specific state or region by selecting the "State Summary" tab at the top of the page.

STATE SUMMARY: How to Search and Filter Data

▪ Like the Map View, apply filters at the top of the page:

1. Select one or all of the three HAI event types
2. Select the region or state
3. Select to view data by year or combined years

STATE SUMMARY: How to Search and Filter Data

- After the table updates to the filters you have chosen, the app will show the event/region/time frame you have selected in a title above the table.

STATE SUMMARY: How to Download Data

▪ You can download the State Summary data by clicking "Download Table Data," which will export as a text data file (.csv).

For more information:

Visit http://www.cdc.gov/hai/surveillance
or email HIP@cdc.gov